

REMARKS

Applicants have carefully studied the outstanding Official Action. The present amendment is intended to be fully responsive to all points of rejection and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the present application are hereby respectfully requested.

Applicants thank the Examiner and Supervisory Examiner Gregory Morse for the courtesy of an interview granted to Applicants' representative Sanford T. Colb, registration number 26,856, on 15 June 2005. In the interview, the patentability of claims 1, 11, and 18 in light of US Published Patent Application 2003/0035543 of Gillon et al was discussed. The Examiner requested clarification of values NK and N which appear in certain claims as filed. Suggested changes to the preambles of the independent claims in order to bring the preambles more in line with the body of the claims were discussed. Suggested changes to more clearly show the invention as being embodied in hardware and suggested changes to claim 11 to clarify the use of the identified key period were also discussed. As discussed in more detail below, various claims have been amended in accordance with the substance of the interview.

Claims 1 - 21 were pending in the present application before the present amendment.

Claim 8 stands objected to due to an informality. As discussed in more detail below, the substance of claim 8 has been written into claim 1, including correction of the informality, and claim 8 has been cancelled.

Claims 1 - 3, 6 - 8, 11 - 13, and 16 - 21 stand rejected under 35 USC 102(e) as being as being unpatentable over US Published Patent Application 2003/0035543 of Gillon et al.

Gillon et al describes a conditional access key encryption system. In particular, in the passages cited by the Examiner (paragraphs 58, 59, and 70 - 73, particularly in paragraph 73) Gillon et al describes a problem, during fast forwarding, in which it may not be possible to provide decryption keys quickly enough. In the system of Gillon et al, "one embodiment of the invention will

continue to display the current I-frame until a new key can be generated as it jumps over several I-frames at a time. In this manner, decryption will take place as quickly as the secure micro unit 1160 can generate new keys.” (paragraph 73)

The present invention, in preferred embodiments, provides a very different solution to the problem of the possible inability to provide decryption keys (or other resources) sufficiently quickly. In preferred embodiments of the present invention, a determination is made to skip over certain key periods (such as, to skip a first number of key periods for every one key period which is not skipped); frames are then chosen for display only from within the key periods that are not to be skipped.

By contrast, the solution of Gillon et al is simplistic. Gillon et al teaches “display[ing] the current I-frame until a new key can be generated” (paragraph 73, emphasis added). Gillon et al might imply that, once a new key has been generated, a further I-frame is displayed, and then the same process is repeated; Gillon et al does not state this explicitly. However, Gillon et al, in contrast to the present invention as claimed in amended claim 1, does not teach or suggest actively determining which I-frames ought to be displayed.

In order to make the distinction of the present invention over the prior art of record particularly clear, claim 1 has been amended by adding the recitation of claim 8, with minor changes of language in line with the discussion in the interview mentioned above to improve clarity. Claim 1 as amended now recites a specific method of actively determining which key periods should have I-frames displayed, and which I-frames should be displayed in those key periods.

Consequent to the amendment to claim 1 and the cancellation of claim 8, amendments have been made to claims 9 and 10.

Claim 1 has also been further amended along the lines suggested in the interview. Specifically concerning the addition of the words “computer-implemented” to the preamble of claim 1, it is pointed out that preferred embodiments of the present invention (as stated, for example, in paragraph 61 of the application as filed) may be implemented in any suitable combination of hardware and software; this recitation both provides support for the term “computer-implemented” and is intended to be a definition thereof.

Amended claim 1 is therefore deemed allowable.

Claims 2, 3, 6, and 7 depend directly or indirectly from amended claim 1 and recite additional patentable subject matter. Claims 2, 3, 6, and 7 are therefore deemed allowable.

Claim 11 has been amended so that claim 11 now recites “reducing a total number of key periods associated with keys for descrambling all of the plurality of frames by performing the following: for each frame f of the plurality of frames: determining whether to substitute a substitute frame g for the frame f based, at least in part, on a distance between frame g and frame f, and based, at least in part, on the identified key period associated with frame g and the identified key period associated with frame f...” (emphasis added).

At least the emphasized feature, indicating that a determination as to whether to substitute a frame g for the frame f is based (at least in part) both on the distance between the two frames and on the key periods associated with the two frames, is neither described nor suggested by Gillon et al. In this regard, the Examiner’s rejection of claim 11 is respectfully traversed. Gillon et al describes a system for continuing to display an I-frame while other frames are being jumped over; Gillon et al does not describe or suggest a system in which a determination as to whether to substitute a particular frame f with another particular frame g is based on a distance between f and g, and on the key periods associated with f and g.

Amended claim 11 is therefore deemed allowable.

Claims 12, 13, 16, and 17 depend directly or indirectly from claim 11 and recite additional patentable subject matter. Claims 12, 13, 16, and 17 are therefore deemed allowable.

Claim 18 is an apparatus claim corresponding to method claim 1 and has been correspondingly amended. Amended claim 18 is therefore deemed allowable.

Claim 19 is an apparatus claim corresponding to method claim 11 and has been correspondingly amended. Amended claim 19 is therefore deemed allowable.

Claim 20 is an apparatus claim in means-plus-function form corresponding to method claim 1 and has been correspondingly amended. Amended claim 20 is therefore deemed allowable.

Claim 21 is an apparatus claim in means-plus-function form corresponding to method claim 11 and has been correspondingly amended. Amended claim 21 is therefore deemed allowable.

Claims 9 and 10 stand rejected under 35 USC 103(a) as being unpatentable over Gillon et al.

Specifically with regards to claim 10, it is respectfully pointed out that Gillon teaches that I frames are often spaced evenly; Gillon does not describe or suggest choosing substitute frames which are themselves evenly spaced, as is recited in claim 10.

Furthermore, claims 9 and 10 depend directly or indirectly from amended claim 1 and recite additional patentable subject matter. Claims 9 and 10 are therefore deemed allowable.

Claims 4, 5, 14, and 15 stand rejected under 35 USC 103(a) as being unpatentable over Gillon et al in view of US Published Patent Application 2004/0062398 of Unger.

Unger describes a method and system for key insertion for stored encrypted content, including producing keys from ECMs.


Claims 4, 5, 14, and 15 depend directly or indirectly from either amended claim 1 or amended claim 11 and recite additional patentable subject matter. Claims 4, 5, 14 and 15 are therefore deemed allowable.

Applicants have carefully studied the other prior art of record including US Published Patent Application 2003/0228018 of Vince, which describes a method for seamless switching between pre-encrypted files in a video-on-demand system. Applicants find that the present invention as claimed is neither described nor suggested in the prior art of record, taken either individually or in combination.

In view of the foregoing remarks, it is respectfully submitted that the present application is now in condition for allowance. Favorable

reconsideration and allowance of the present application are respectfully requested.

Respectfully submitted,



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